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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,044	07/07/2003	Hyou Takahashi	Q76465	4729

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WASHINGTON, DC 20037

EXAMINER

WALKE, AMANDA C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/613,044

Applicant(s)

TAKAHASHI ET AL.

Examiner

Amanda C. Walke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-12 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kodama et al (EP 1179750).

Kodama et al disclose a positive photosensitive resin comprising an acid generator, a resin, a dissolution inhibitor, a surfactant, a solvent, a nitrogen-containing basic compound, and an onium salt of a carboxylic acid. PAG 4-30 of Kodama et al is disclosed within the instant application as a preferred compound of component (C) (instant C-1 on page 15 of the instant spec). The carboxylic acid anions are disclosed on pages 72-80. In these examples, Rb is taken to be a single bond, or Rc is a methyl or substituted methyl group. The reference discloses compound meeting the limitations of compound B, as well as the claimed relationship (see pages 81 and 82). Component F of the resist composition is preferably a novolak resin, which is a phenolic resin. Compound II-62 meets the limitations for the instant formula VIII. Given the teachings of the reference, the instant claims are anticipated by Kodama et al.

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3. Claims 1-12 and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Kodama et al (6,485,883)

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Kodama et al disclose a positive photosensitive resin comprising an acid generator, a resin, a dissolution inhibitor, a surfactant, a solvent, a nitrogen-containing basic compound, and an onium salt of a carboxylic acid. The carboxylic acid anions are disclosed in columns 8-21. In these examples, Rb is taken to be a single bond, or Rc is a methyl or substituted methyl group. The reference teaches that a preferred additional resin is a novoak resin which is a phenolic resin. Formula III meets the limitations for the instant formula VIII. Given the teachings of the reference, the instant claims are anticipated by Kodama et al.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (6,136,500).

Kobayashi et al disclose positive as well as negative radiation sensitive resin compositions that, in addition to being capable of providing excellent resolution and pattern profile, are particularly excellent in avoiding the problems of nano-edge roughness or coating surface roughness. The positive type radiation sensitive resin composition comprises (A) (a) an acid-decomposable group-containing resin, or (b) an alkali-soluble resin and an alkali dissolution controller, and (B) a photoacid generator comprising a compound that upon exposure to radiation generates a carboxylic acid having a boiling point of 150 degrees C or higher, and a compound that upon exposure to radiation generates an acid other than a carboxylic acid. The negative type radiation sensitive resin composition comprises (C) an alkali-soluble resin, (D) a cross-linking agent (meeting the instant claim limitations of component B), and the component (B) as described above. The reference teaches that a phenolic resin is specifically contemplated (formula 6 of the reference). The reference teaches that a preferred acid generator is compound 36 (column 17), which meets the limitations for compound C. . In these examples, Rb is taken to be a single bond, or Rc is a methyl or substituted methyl group. The reference further teaches that other known acid generators may be employed in combination with the preferred acid generators which meet the limitations of compound A, therefore it would have been obvious to one of ordinary skill in the art to prepare the material of Kobayashi et al choosing to employ the preferred acid generator in combination with an additional acid generator, with reasonable expectation of achieving a resin having highly accurate patterns.

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6. Claims 7 and 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al in view of Kodama et al (EP or '883).

Kobayashi et al has been discussed above, and while the reference teaches that any known photoacid generators may be used in the invention, it fails to specifically teach a compound meeting the limitations of formula VIII.

Both Kodama et al references teach that known PAGs include compounds meeting the limitations of the instant formula VIII.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Kobayashi et al choosing to include the known acid generator of either Kodama et al reference with reasonable expectation of achieving a material having decreased roughness.

### ***Conclusion***

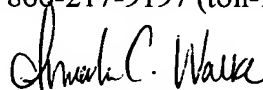
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimada et al (6,759,177 and 2004/0180289) are cited for their teachings of similar compounds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C. Walke whose telephone number is 571-272-1337. The examiner can normally be reached on M-R 5:30-4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Amanda C Walke  
Examiner  
Art Unit 1752

ACW  
May 11, 2005